1. (Twice Amended) A dry etching method comprising the steps of,

preparing a semiconductor wafer which comprises a semiconductor body, a plurality of gate electrodes formed on a main surface of said semiconductor body, a nitride film formed to cover said gate electrodes on said main surface, an oxide film formed to cover said nitride film on said main surface, and a mask film having a hole pattern formed on said oxide film, said hole pattern exposing a surface portion of said oxide film located between said gate electrodes;

disposing said wafer in an etching treatment chamber;

introducing CF group gas, Ar gas and one gas selected from O_2, SF_6, CF_4 and SiF_4 into said etching treatment chamber under a reduced pressure;

generating electromagnetic waves and a magnetic field in an etching treatment chamber under vacuum,

generating plasma by electron-cyclotron resonance, and

etching said surface portion of said oxide film in said hole pattern in said etching treatment chamber, wherein

a distance between an antenna which is arranged in said etching treatment chamber and injects the electromagnetic waves, and said wafer is set at a value in the range from

30 mm to 100 mm,

the frequency of said electromagnetic waves is set at a value in the range from 300 MHz to 600 MHz,

a magnetic field gradient is set,

two kinds of electronic temperature regions are generated between said antenna and the wafer, and

an etching treatment is performed in a condition, that a gas pressure in said etching treatment chamber is in the range from 0.1 Pa to 4 Pa.

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2. (Twice Amended) A dry etching method as claimed in claim 1, further comprising the steps of:

generating F (fluorine radicals) and ions corresponding to CF_2 in said plasma, each amount of which is independent from each other, and

performing said etching treatment.

3. (Twice Amended) A dry etching method as claimed in claim 2, further comprising the steps of:

determining power of a high frequency power source for generating said high electromagnetic waves, and

performing said etching treatment.

5. (Twice Amended) A dry etching method as claimed in claim 1, further comprising the steps of:

generating electromagnetic waves and a magnetic field in said etching treatment chamber,

generating plasma by electron-cyclotron resonance (ECR),

determining a position of ECR,

generating F (fluorine radicals) and ions corresponding to CF_2 in said plasma, each amount of said F and said ions being independent from each other, and

performing said etching treatment.

8. (Twice Amended) A dry etching method comprising the steps of:

preparing a wafer which comprises a substrate, a plurality of gate electrodes formed on a main surface of said substrate, a first film containing nitrogen formed to cover said gate electrodes on said main surface, a second film containing oxygen formed to cover said first film on said main surface, and a mask film having a hole pattern formed on said second film, said hole pattern exposing a surface portion of said second film located between said gate electrodes;

disposing said wafer in an etching treatment chamber;

introducing CF group gas, Ar gas, and one gas selected from O_2, SF_6, CF_4 and SiF_4 into said etching treatment chamber under a reduced pressure,

generating electromagnetic waves and a magnetic field in said etching treatment chamber,

generating plasma by electron-cyclotron resonance, and

performing an etching treatment with said wafer, wherein

a distance between an antenna, which is arranged in said etching treatment chamber and injects the electromagnetic waves, and said wafer is set at a value in the range from 30 mm to 100 mm,

a magnetic field gradient is controlled by setting the frequency of said electromagnetic waves at a value in the range from 300 MHz to 600 MHz,

a generation ratio of CF_2/F is controlled by varying two kinds of electronic temperature regions between said antenna and said wafer, and

an etching treatment for selectively etching said second film is performed.

10. (Twice Amended) A dry etching method comprising the steps of:

preparing a wafer which comprises a substrate, a plurality of gate electrodes formed on a main surface of said substrate, a first film containing nitrogen formed to cover said gate electrodes on said main surface, a second film containing oxygen formed to cover said first film on said main surface, and a mask film having a hole pattern formed on said second film, said hole pattern exposing a surface portion of said second film located between said gate electrodes;

disposing said wafer in an etching treatment chamber;

introducing CF group gas, Ar gas, and one gas selected from O_2, SF_6, CF_4 and SiF_4 into said etching treatment chamber under vacuum,

generating electromagnetic waves and a magnetic field in said etching treatment chamber,

generating plasma by electron-cyclotron resonance, and

performing an etching treatment with said wafer, wherein

a distance between a wafer facing plane, which is arranged in said etching treatment chamber, and said wafer is set at a value in the range from 30 mm to 100 mm,

a magnetic field gradient is determined by setting the frequency of said electromagnetic waves at a value in the range from 300 MHz to 600 MHz,

two kinds of electronic temperature regions are generated between said wafer facing plane and said wafer, and

an etching treatment is performed in a condition, that a gas pressure in said etching treatment chamber is in the range from 0.0 Pa to 4 Pa.

14. (Twice Amended) A dry etching method as claimed in claim 13, wherein

two kinds of electronic temperature regions are generated between said wafer facing plane and said wafer,

F (radicals) and ions corresponding to CF_2 in plasma are generated, each amount of said radicals and said ions is independent from each other, and

said etching treatment is performed.

16. (Twice Amended) A dry etching method as claimed in claim 14, wherein

F (fluorine radicals) and ions corresponding to CF_2 in said plasma are generated, each amount of said F and said ions is independent from each other, in correspondence to an etching process of the oxide film, and

said etching treatment is performed.

17. (Twice Amended) A dry etching method comprising the steps of:

preparing a semiconductor wafer which comprises a semiconductor body, a plurality of gate electrodes formed on a main surface of said semiconductor body, a nitride film formed to cover said gate electrodes on said main surface, an oxide film formed to cover said nitride film on said main surface, and a mask film having a hole pattern formed on said oxide film, said hole pattern exposing a surface portion of said oxide film located between said gate electrodes;

disposing said wafer in an etching treatment chamber;

introducing CF group gas, Ar gas and one gas selected from O_2, SF_6, CF_4 and SiF_4 into said etching treatment chamber under a reduced pressure;

generating electromagnetic waves and magnetic filed in said etching treatment chamber,

generating plasma by electron-cyclotron resonance in said etching treatment chamber, and

performing an etching treatment with said wafer, wherein

a distance between a wafer facing plane, which is arranged in said etching treatment chamber, and said wafer is set at a value in the range from 30 mm to 100 mm,

a magnetic field gradient is determined by setting the frequency of said electromagnetic waves at a value in the range from 300 MHz to 600 MHz,

the generation ratio of CF_2/F is controlled by making two kinds of electronic temperature regions, which are generated between said wafer facing plane and said wafer, variable by controlling the magnetic field gradient, and

the etching treatment for selectively etching said nitride film is performed.

18. (Twice Amended) A dry etching method comprising the steps of:

preparing a wafer which comprises a substrate, a plurality of gate electrodes formed on a main surface of said substrate, a first film containing nitrogen formed to cover said gate electrodes on said main surface, a second film containing oxygen formed to cover said first film on said main surface, and a mask film having a hole pattern formed on said second film, said hole pattern exposing a surface portion of said second film located between said gate electrodes;

disposing said wafer in an etching treatment chamber;

introducing CF group gas, Ar gas, and one gas selected from O_2, SF_6, CF_4 and SiF_4 into said etching treatment chamber so as to maintain a gas pressure in said etching treatment chamber,

generating plasma by electron-cyclotron resonance in said etching treatment chamber, and

performing an etching treatment with a wafer, wherein

a distance between a wafer facing plane, which is arranged in said etching treatment chamber, and said wafer is set at a value in the range from 30 mm to 100 mm,

each of frequencies of a high frequency power source for generating first electromagnetic waves and a high frequency power source for generating second electromagnetic waves is set at a value in the range from 300 MHz to 600 MHz, respectively,

high frequency bias having a lower frequency either of the first electromagnetic waves and the second electromagnetic waves is applied to a process platform,

the wafer is treated thereon,

two kinds of electronic temperature regions are generated between said wafer facing plane and said wafer,